

#### REMARKS

Claims 11-24, 29 and 30 have been canceled. Claims 1-5 and 7-10 and 25-28 are active in the case. Reconsideration is respectfully requested.

The present invention relates to product which exhibits thermal insulation properties.

#### Claim Rejection, 35 USC 112

The rejection of the claims is believed obviated by the cancellation of Claims 29 and 30. Withdrawal of the rejection is respectfully requested.

#### Invention

The present invention is directed to a thermal insulation product. The product comprises (i) a loose fill, and (ii) at least one carbonate dispersed in the loose fill, wherein the particles of the at least one carbonate have a mean diameter ranging from 3 to 6  $\mu\text{m}$ . The IR absorbing and scattering material provides a cost-effective means of improving loose fill thermal insulation.

#### Prior Art Rejection

Claims 1, 2, 4, 5, 7, 8, 10, 25, 26 and 28 stand rejected on 35 USC 102(b) as anticipated by Clausen et al. WO 97/20780. This ground of rejection is respectfully traversed.

Applicants submit that the '780 document does not show the insulating product that is presently claimed. It is clear that the product that is produced in the '780 document is a solid and rigid product that is produced in the form of slabs, mats, pipes and granules as described at the bottom of page 8, whereas in the present invention, the insulating product is in the form of a "loose fill." As such the insulating loose fill of the invention is placed in attics and hollow spaces **without compaction** of any sort so that it can function as an insulating barrier.

In Clausen et al '780, the product of the reference is produced only from mineral fibers that are produced from the likes of glass, rock, stone and slag (page 8, last two lines). The fibers then are collected into a web and the subjected to cross-lapping to form a batt and then this batt is compressed and heat cured (page 11, lines 7-11) in the form of the particular product desired such as a pipe, slab or the like. By contrast, the loose fill of the present invention is formed from one or more of a variety of different types of materials that include inorganic and organic substances. The loose fill can be in the form of fibers, flakes, powders, granules and/or nodules as described on page 4 of the specification. Clearly, the product of the reference is not that of the present invention.

Another important difference between the product of the reference and the loose fill of the present invention is that in Clausen et al, if calcium carbonate is selected from the group of materials mentioned on page 3 of the reference as the endothermic material, in order for the endothermic material to properly function as such, the particle size of the material must be, at a minimum, above 5  $\mu\text{m}$ . On the other hand, for the particulate carbonate to properly function as an IR absorbing and scattering material in the loose fill of the invention, the particle size of the carbonate must range within the very narrow range of from 3 to 6  $\mu\text{m}$ . As previously stated on the record, Table 2 on page 7 in the specification shows that a particulate carbonate with a mean diameter of 5  $\mu\text{m}$  provides the lowest thermal conductivity effect. As is understood, a low thermal conductivity is desirable since it provides the loose fill with improved insulation characteristics. This effect is graphically shown in Figure 4 of the specification. Clearly, the effectiveness of the particulate carbonate of the invention in minimizing thermal conduction as it functions as an IR absorbing and scattering agent is limited to a very narrow particle size range. There is no teaching or suggestion of this phenomenon in the reference. To the contrary whatever endothermic material is selected in the reference, in the case of a selection of a carbonate, the agent functions by absorbing heat

and eventually thermally **decomposing** by releasing carbon dioxide. It is by this means that the protective slab, pipe or the like functions in the reference as a material which provides objects with fire protection. Thus, the manner in which a carbonate such as calcium carbonate functions in the slab or the like material of the reference is totally different from the manner in which the carbonate filler functions in the insulating loose fill of the present invention. Whereas the product of the reference functions as fire protecting material, the loose fill of the present invention functions entirely differently as an insulating material. Clearly, the “780 reference does not anticipate the invention as presently claimed, and withdrawal of the rejection is respectfully requested.

Claims 3, 9 and 27 stand rejected on 35 USC 103(a) as obvious over Clausen et al. WO 97/20780. This ground of rejection is respectfully traversed.

Applicants traverse this ground of rejection for the same reasons as stated above. Further, however, with respect to present Claim 3, it is submitted that the Examiner is in error in her statement on page 5, first full paragraph of the Office Action to the effect that one of skill in the art would have been motivated to have employed recycled newspaper as the fiber to prepare the product of the reference, because in order to prepare a slab, pipe or the like which provides protection from fire, one would never select the newspaper materials of Claim 3, **since they are combustible materials**. Moreover, the direction of the so-called motivation is backwards. That is, the direction of motivation of one of skill in the art would have to be how and in what manner the disclosure of Clausen et al would motivate one of skill in the art to reach beyond what the reference discloses to prepare, not a slab, pipe or the like that functions as a fire protection material, but a loose fill material that functions as insulating material, wherein the particulate carbonate of the present loose fill material functions in preventing heat conduction, whereas the carbonate additive in the material of the reference provides a flame protecting effect by virtue of the carbonate to undergo

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endothermic decomposition in which carbon dioxide is released from the protective material.

Moreover, the subject matter of present Claims 9 and 27 is not suggested by the reference.

Withdrawal of the rejection is respectfully requested.

Applicants submit that the claims are in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 08/03)  
NFO/FDV



Frederick D. Vastine, Ph.D.  
Registration No. 27,013